November 8, 2010

Water Docket
Environmental Protection Agency
Mail Code: 28221T
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Docket ID No. EPA-R03-OW-2010-0736; AF&PA and NAFO Comments on Draft Chesapeake Bay TMDL for Nutrients and Sediment (75 *Fed. Reg.* 57776 (9/22/10))

To Whom It May Concern:

The American Forest & Paper Association (AF&PA) and the National Alliance of Forest Owners (NAFO) appreciate the opportunity to provide comments on EPA's Draft Chesapeake Bay Total Maximum Daily Load (TMDL) for nutrients and sediment.

AF&PA is the national trade association of the forest products industry, representing pulp, paper, packaging and wood products manufacturers, and forest land owners. Our companies make products essential for everyday life from renewable and recyclable resources that sustain the environment. The forest products industry employs approximately 1 million people and is among the top 10 manufacturing sector employers in 48 states.

NAFO is an organization of private forest owners committed to advancing federal policies that promote the economic and environmental values of privately-owned forests at the national level. NAFO membership encompasses more than 75 million acres of private forestland in 47 states. Working forests in the U.S. support 2.5 million jobs. View NAFO's interactive map to see the economic impact of America's working forests.

AF&PA and NAFO members own forest land in the Chesapeake Bay watershed. Those members could face unwarranted requirements to change their sustainable forest management practices as a result of incorrect assumptions in the TMDL.

AF&PA and NAFO have joined other comments filed today by groups representing a wide range of organizations in the regulated community. Those comments challenge the legality of the TMDL on a variety of grounds, including lack of due process. They also address various technical and policy issues regarding the TMDL. These technical comments have been supplemented in more detail with respect to forests and forest management by the National Council for Air and Stream Improvement, Inc. (NCASI)(attached). AF&PA and NAFO strongly support the comments filed by NCASI as well and are filing these limited additional comments to further demonstrate the lack of due process inherent in certain aspects of EPA's waters quality modeling supporting the TMDL.

As discussed in all three sets of comments, some of the most significant pieces of information relied on by EPA to develop the TMDL are the inputs to and outputs from a model called "Scenario Builder." Among other things, the outputs from Scenario Builder were used as inputs into the Chesapeake Bay Watershed model, another critical component of the overall modeling framework for the Bay. EPA has not made these inputs and outputs available for public review, which is a violation of due process considering the critical role they play in EPA's overall decision-making process.

Among the many assumptions in Scenario Builder are assumptions regarding the effectiveness of forestry best management practices (BMPs). Forestry activities in the United States are now conducted under a comprehensive program of BMPs. All states with significant forest management activities have developed either regulatory or non-regulatory BMP programs to achieve water quality goals. Research results overwhelmingly document that properly installed and maintained forestry BMPs can reduce pollution loads to streams by as much as 80 to 90%.[1] A key factor in effectiveness is the rate at which the BMPs are implemented.

As discussed in the NCASI comments, EPA has used implementation values that are much lower than those in a study it appeared to rely on for such values in the TMDL. Moreover, the values in the study also appear to underestimate forestry BMP implementation, and therefore effectiveness, as demonstrated in numerous forestry BMP effectiveness studies conducted around the country, including several in the Chesapeake Bay watershed. By incorrectly underestimating BMP effectiveness, the resulting forest management scenarios used in the Bay Watershed Model will lead users to incorrectly conclude that forest management is a significant source of nutrient and sediment pollution, in turn leading EPA to seek unwarranted changes in BMPs from forest landowners in the Bay, including AF&PA and NAFO members.

Based on the deficiencies we have identified and the numerous other deficiencies in the other comments referenced above, AF&PA and NAFO concur with those comments that EPA should withdraw the TMDL, or, if EPA does not withdraw the TMDL, the agency should revise it significantly.

[1] See comments filed by the National Council for Air and Stream Improvement, Inc. , "Techncial Review, *Draft Chesapeake Bay Total Maximum Daily Load,* Docket Number EPA-R03-OW-2010-0736," Erik B. Schilling, George G. Ice, and T. Bently Wigley, *November 5, 2010* ("NCASI Comments").

Please feel free to contact either Jerry Schwartz (jerry_schwartz@afandpa.org. or 202/463-2581) or Chip Murray (cmurray@nafoalliance.org or 202/747-0742) regarding any questions about these comments.

Respectfully,

Senior Director
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Vice President for Policy & General Counsel

Attachment

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TECHNICAL REVIEW
Draft Chesapeake Bay Total Maximum Daily Load
Docket Number EPA-R03-OW-2010-0736

Erik B. Schilling, George G. Ice, and T. Bently Wigley,

November 5, 2010

In the September 22, 2010 *Federal Register*, the U.S. Environmental Protection Agency (EPA) announced the availability of EPA's Draft Chesapeake Bay Draft Total Maximum Daily Load (TMDL) for nutrients and sediment for public review and comment (*FR 75* 57776-57778). In the Notice, the EPA reported that it was establishing the Draft TMDL for nutrients (nitrogen and phosphorus) and sediment for each of the 92 segments in the tidal portion of the Chesapeake Bay watershed pursuant to Sections 117(g) and 303(d) of the Clean Water Act. Thus, the Draft TMDL contains segment-specific point and non-point allocations for nitrogen, phosphorous and sediment that will assure the attainment and maintenance of all applicable water quality standards for each of the 92 segments.

The National Council for Air and Stream Improvement, Inc. (NCASI) is a non-profit organization that serves the forest products industry as a center of excellence for providing technical information and scientific research needed to achieve the industry's environmental goals and principles. NCASI (http://www.ncasi.org) has a long history of supporting research to help its member companies better manage forest and manufacturing operations to meet environmental objectives including the protection of water quality. In 1977, NCASI established a formal research program addressing watershed issues. The mission of the Forest Watershed Program is to develop, document, and communicate scientific information regarding the effects of forest practices and natural processes on aquatic resources. This includes developing or documenting solutions to undesirable watershed effects of forest practices. Because NCASI is interested in developing cost-effective measures for protecting water quality, we offer the following observations about the draft Chesapeake Bay TMDL.

1. Forestry best management practices are implemented at high rates nationally and in states within the Chesapeake Bay watershed.

Forestry activities in the United States are now conducted under a comprehensive program of best management practices (BMPs). Since enactment of the Federal Water Pollution Control Act Amendments of 1972, all states with significant forest management activities have developed either regulatory or non-regulatory BMP programs under Sections 208, 319 and 404 to achieve water quality goals. The rate at which forestry best management practices are implemented is a key factor in judging the effectiveness of state forestry nonpoint source control programs. Using weighted annual state timber harvest volumes and BMP implementation rates from state assessment reports, Ice et al. (2010) calculated an adjusted national average implementation rate of 89%. Generally, implementation rates are increasing over time (Ice et al. 2010, NCASI 2009). Specific data on harvest levels and BMP implementation rates for states in the Chesapeake Bay watershed are shown in Table 1.

Table 1. Annual Harvest Removals and Reported BMP Implementation Rates for States in the Chesapeake Bay Watershed. Adapted from Ice et al. 2010[1].

State	Removals (1000 ft^3)	Implementation Rate (%)
Virginia	644,260	82
Pennsylvania	211,921	85 [est.]
New York	158,454	77 (1998)
West Virginia	158,373	85
Maryland	38,091	81
Delaware	7,560	50 [est.]

[1]Annual harvest data are 2006 estimates from the USDA Forest Service Draft National Sustainable Forestry: 2010 Report. State BMP implementation data from NCASI 2009.

2. When implemented, forestry BMPs are effective at protecting water quality.

Research results overwhelmingly document that properly installed and maintained forestry BMPs effectively reduce sediment impacts as well as maintain stream water temperatures and dissolved oxygen levels. In fact, BMPs can reduce pollution loads to streams by as much as 80 to 90% (Ice et al. 2004). Ice (2004b) and Ice et al. (1997, 2004a, 2005a, 2005b) present results from studies of BMP effectiveness and summarize this body of research. Other sources of publications that document BMP effectiveness are a 2004 special issue of *Water, Air, and Soil Pollution* (Volume 4, Issue 1), presentations from a 2003 Workshop on Predicting Sediment from Forest Road Systems in the South (http://fri.sfasu.edu/pages/projects/alto/html/

forest_roads_03.html), and proceedings of the 2006 International Conference on Hydrology and Management of Forested Wetlands (http://www.asabe.org/pubs/PubCat02/environment.html).

3. There have been numerous studies in the Chesapeake Bay Region documenting BMP effectiveness, many of which do not appear to have been considered by EPA.

There have been numerous studies in the Chesapeake Bay Region documenting BMP effectiveness, many of which do not appear to have been considered by EPA. A brief synopsis of key findings from these studies is as follows.

A watershed study conducted in central Pennsylvania suggested that the BMPs were effective in controlling non-point source pollution from a 44.5-hectare commercial clearcut (Lynch et al. 1985). Among the BMPs used were: protective buffer strips; a prohibition on skidding over streams; supervision of logging by a qualified forester; division of timber sales into blocks with cutting restricted to one block at a time; no disposal of tops or slash within 8 m of streams; proper location of haul roads, skid trails and log landings; retirement of skid trails, haul roads and culverts after logging; posting of a performance bond prior to logging. Slight increases in stream temperature, turbidity, and nitrate and potassium concentrations were observed, but these increases did not exceed drinking water standards. The authors concluded that the slight increases in temperature and nutrients were possibly temporarily beneficial to the aquatic ecosystem.

Passhaus et al. (2003) used macroinvertebrate sampling to monitor ephemeral stream water quality in partially harvested and reference watersheds in the Catskill Mountain Region of southern New York. A variety of diversity indices showed no evidence that partial harvest using BMPs negatively impacted aquatic communities or water quality. Within the reference sites, the structure of the macroinvertebrate community varied greatly between years.

In New York, Schuler and Briggs (2000) found that implementation rates for 42 suggested BMPs were 78% for haul roads, 87% for landings, 59% for skid trails, 88% for equipment maintenance/operation, and 73% for buffer strips. Departures were common for BMPs concerned with draining water off haul roads and skid trails, and for stream crossings; thus, the authors concluded that more attention must be devoted to those practices. BMPs were reported to be effective when they were applied correctly.

Wang et al. (2006) reported small changes in stream water chemistry following a partial harvest with BMPs in 2002 of a catchment in the Catskill Mountains of southern New York. Stream water chemistry concentrations increased significantly after harvest treatments and peak concentrations were reached 5 months or more after initiation of the harvest. Stream water chemistry returned to values similar to those of the preharvest period and to reference levels by early spring 2003. Nitrate concentrations, however, remained elevated above background levels for approximately 18 to 20 months after harvest.

In the Hubbard Brook Watershed of New Hampshire, Trimble and Sartz (1957) evaluated the performance of recommended buffer widths for protecting water quality for two situations. The authors concluded that, for municipal watersheds where minor impacts on water quality are not acceptable, a 50-ft buffer width on flat terrain would be adequate, and that width of the buffer should increase 4 ft for each 1-percent increase in slope between the road and stream. For general purpose situations where small or infrequent impacts on water quality can occasionally be tolerated, they concluded that a starting buffer width of 25-ft on level ground was effective and buffer widths should increase by 2-ft for each 1-percent increase in slope of the land between the road and stream.

In Frederick County, Maryland, MD DNR (2000) used a paired watershed design to monitor effectiveness of Maryland's BMPs for timber harvest operations. They found that total suspended solids, stream temperature, and benthic macroinvertebrate populations did not change significantly as a result of timber harvesting.

Martin et al. (2000) monitored stream water quality following clearcutting and progressive strip cutting in the Hubbard Brook Experimental Forest. Reduced transpiration and interception increased water yield while peak flows only increased moderately. Water yield and peak flow increases returned to normal levels within 4-6 years. Sediment yields increased during and after harvest but were maintained within normal ranges of reference streams. Increases in sediment yield and stream water nutrient levels returned to preharvest levels within 3-5 years due to rapidly growing vegetation and effective best management practices.

Martin et al. (1984) observed small differences in water chemistry between recently clearcut and reference watershed across a wide range of forest and soil types in New England. The amount of observed responses to clearcutting was of the same magnitude as natural variations among streams draining similar watersheds. They concluded that limiting clearcut sizes, utilizing patch and strip cutting, and installing streamside management zones all appeared to effectively reduce the magnitude of changes in stream water chemistry.

Wynn et al. (2000) evaluated the effects of clearcutting on water quality and the effectiveness of forestry BMPs in Westmoreland County, VA. One watershed was clearcut without BMPs, one watershed was clearcut with BMPs and a third watershed was left undisturbed as a control. Storm event concentrations and loadings of sediment, nitrogen, and phosphorus increased following clearcutting and site preparation when BMPs were not utilized. During the study period both the clearcut BMP watershed and the control watershed showed few changes in pollutant storm concentrations and loadings.

4. The Chesapeake Bay Model used by EPA appears to underestimate BMP efficiency.

Nutrient loading values estimated by the Bay Model appear to be based on literature values calculated by Edwards and Williard (2010). In their paper the authors state, "*For sediment, BMP efficiencies ranged from 53 to 94% during harvest and up to 1-year after harvesting. For nutrients, BMP efficiencies were higher for total nitrogen (60-80%) and phosphorus (85-86%), which included particulate and sediment bound forms, than for nitrate-nitrogen (12%) which occurs primarily in the dissolved phase.*" However, values published in the documentation for Scenario Builder Version 2.2 (Brosch 2010) under the section of forest harvesting practices (see table, page 10-108) have BMP efficiencies that are lower than the range of values estimated by Edwards and Williard (e.g., total N = 50%, total P = 60% and sediment = 60%). Thus, it appears that BMP efficiencies used in Scenario Builder were derived through expert opinion and are more conservative than those identified by Edwards and Williard (2010).

If nutrient and sediment removal efficiencies used in Scenario Builder were based solely on the three referenced studies in Edwards and Williard (2010), data from a substantial number of forestry BMP effectiveness studies conducted in the eastern US (see BMP effectiveness resources and specific research noted above) have been unnecessarily ignored. There are literally hundreds of paired watershed studies and other controlled experiments that have tested or are testing the effectiveness of contemporary forest practices and BMPs (Ice 2004, Ice and Stednick 2004, Ice et al. 2007). Some of these, such the Piedmont Watershed Studies (Williams et al. 1999), the Alto Watershed Study in East Texas (McBroom et al. 2008), and the Alsea Watershed Study and Watersheds Research Cooperative in Oregon (OFRI 2009), have measured or are measuring improvements in water quality from managed forests for contemporary practices compared to historic impacts. Unfortunately, the forest management scenarios used in the Bay Watershed Model will lead users to incorrectly conclude that forest management is a significant source of nutrient and sediment pollution.

5. Sustainable forest management provides incentives for landowners to retain forest land in forest cover.

Today the greatest threat to water quality impairment in the Chesapeake Bay Watershed results from deforestation that results from the conversion of forests to non-forest uses that produce a higher economic value. The families, businesses and individuals that own nearly 60% of our nation's forests depend on the returns they get from the products their forests produce to make additional investments in sound, long-term forest management. When existing markets for their products are strong, or when new markets like energy emerge, they provide forest owners the means to keep their land forested by keeping their forests economically competitive with other uses. However, when regulatory costs are imposed, this reduces a landowner's ability to maintain the land in forest cover and at some point will tip the balance in favor of non-forest uses.

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